

WHAT IS CLAIMED IS:

1. A method in a radio frequency identification (RFID) tag device for minimizing unintended re-negotiation of the tag device wherein the tag includes a confirmed read flag indicating whether the tag has been previously read, comprising the steps of:

(a) receiving a symbol from a reader when an operating state of the tag is a first state;

(b) if the received symbol has a first logical value, transitioning the operating state to a second state; and

(c) if the received symbol has a second logical value, performing the following steps:

(1) evaluating the confirmed read flag,

(2) if the confirmed read flag indicates the tag has been previously read, transitioning the operating state to a dormant state, and

(3) if the confirmed read flag indicates that the tag has not been previously read, transitioning the operating state to the second state.

2. The method of claim 1 further comprising the step of:

(d) if the received symbol has a third logical value, performing the steps of:

(1) clearing the value of the confirmed read flag, and

(2) transitioning the operating state to the second state.

3. The method of claim 2 further comprising the step of:

if the received symbol has a fourth logical value, transitioning the operating state to a third state.

4. The method of claim 1 further comprising the steps of:
negotiating a complete tag identification number with the reader when the operating state is a fourth state;
receiving a symbol from the reader when the operating state is the fourth state; and
if the symbol has the first logical value, setting the confirmed read flag to indicate that the tag has been read; and
transitioning the operating state to the dormant state.
5. The method of claim 4 wherein the first logical value is a “0” symbol.
6. The method of claim 5 wherein the second logical value is a “1” symbol.
7. The method of claim 3 wherein the first logical value is a “0” symbol, the second logical value is a “1” symbol, and the fourth logical value is a “NULL” symbol.
8. The method of claim 1 wherein the first state is a calibration state.
9. The method of claim 1 wherein the second state is a global mode set state.
10. The method of claim 3 wherein the third state is a tree start state.
11. The method of claim 4 wherein the fourth state is a tree traversal state.
12. A method in a radio frequency identification (RFID) tag for minimizing unintended re-negotiation of the tag, wherein the tag includes a confirmed read flag indicating whether the tag has been previously read, comprising the steps of:
 - (a) determining whether a read status check symbol has been received;

(b) if it is determined that a read status check symbol has not been received, performing the steps of:

(1) evaluating the confirmed read flag;

(2) if the confirmed read flag indicates the tag has been previously read, transitioning the operating state to a dormant state, and

(3) if the confirmed read flag indicates that the tag has not been previously read, transitioning the operating state to the second state.

13. A method in a radio frequency identification (RFID) tag for minimizing unintended re-negotiation of the tag, wherein the tag includes a confirmed read flag indicating whether the tag has been previously read, comprising the steps of:

(a) negotiating a complete tag identification number with the reader when the operating state is a tree traversal state;

(b) receiving a symbol from the reader;

(c) if the symbol has the first logical value, setting the confirmed read flag to indicate that the tag has been read; and

(d) transitioning the operating state to the dormant state.

14. The method of claim 13 further comprising the steps of:

receiving a symbol from a reader when an operating state of the tag is a calibration state;

if the received symbol has a first logical value, transitioning the operating state to a global mode set state;

if the received symbol has a second logical value, evaluating a confirmed read flag;

if the confirmed read flag indicates the tag has been previously read, transitioning the operating state to a dormant state; and

if the confirmed read flag indicates that the tag has not been previously read, transitioning the operating state to the global mode set state.

15. The method of claim 13 further comprising the step of:

if the received symbol has a third logical value, transitioning the operating state to a tree start state.

16. A radio frequency identification (RFID) tag, comprising:

means for storing a confirmed read flag that indicates whether the tag has been recently read;

means for responding to an interrogation by a reader, including means for evaluating the value of the confirmed read flag upon receipt of a first logical symbol from a reader when an operating state is a first state; and

means for transmitting data to the reader.

17. The RFID tag of claim 16 further comprising:

means for resetting the confirmed read flag in response to a symbol received from the reader when the RFID tag is in a first operating state.

18. The RFID tag of claim 17 wherein the first operating state is a calibration state.

19. The RFID tag of claim 16 wherein the means for storing loses its stored value after a predetermined length of time.

20. The RFID tag of claim 19 wherein the means for storing comprises a capacitor.

21. The RFID tag of claim 20 wherein the means for storing comprises a digital storage device.

22. A method in a radio frequency identification (RFID) reader for minimizing unintended re-negotiation of tags in a population of tags, comprising the steps of:

(a) determining whether an interrogation of all tags in the population of tags is required or whether an interrogation of only unread tags is required;

(b) if it is determined in step (a) that all tags in the population of tags are to be interrogated, transmitting a first symbol to the population of tags; and

(c) if it is determined in step (a) that only unread tags are to be interrogated, transmitting a second symbol to the population of tags.

23. The method of claim 22 further comprising the steps of:

negotiating a complete identification number with a first tag in the population of tags;

transmitting at least one symbol to cause the first tag to enter a first operating state; and

transmitting at least one symbol to cause the first tag to set a confirmed read flag and enter dormant state.